



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,864	02/24/2004	Hiroshi Miyanari	1232-5309	3636
27123	7590	09/19/2007		
MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			EXAMINER KHAN, USMAN A	
			ART UNIT 2622	PAPER NUMBER
			NOTIFICATION DATE 09/19/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOPatentCommunications@Morganfinnegan.com
Shopkins@Morganfinnegan.com
Tquinones@Morganfinnegan.com

Office Action Summary

Application No.

10/786,864

Applicant(s)

MIYANARI ET AL.

Examiner

Usman Khan

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Response to Arguments

Applicant's arguments filed on 07/02/2007 with respect to claims 1 - 6 and 8 - 11 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument for claims 1:

Regarding **claims 1**, response to applicant's argument that in claim 1, Kohashi et al. fails to teach correcting image data of each of said plurality of pixels, acquired by image sensing in an exposed state, by using the correction data.

In response Kohashi et al. teaches in figure 5 items 31-1 *et seq.* and column 13 lines 62 *et seq.*; and correcting each pixel is taught in column 2 lines 52 – 62, column 6 lines 50 – 62 column 13 lines 4 – 40; also figures 24 – 27 and column 21 lines 38 *et seq.* Kohashi et al. teaches that the faulty pixel group can be composed of more than one pixel for correcting i.e. plurality of pixels.

Regarding objection to specification provided in the previous office action for failing to provide a descriptive title. Applicant has amended the title of the invention to overcome the objection to the specification.

Regarding rejection under 35 U.S.C. 101 provided in the previous office action for claim 8. Applicant has amended claim 8 to overcome the rejection under 35 U.S.C. 101 hence the rejection is withdrawn.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 – 3, 5 – 6, and 9 – 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Kohashi et al. (US patent No 6,642,960).

Regarding **claim 1**, Kohashi et al. teaches an image sensing apparatus (abstract and column 2 lines 5 *et seq.*) comprising: a plurality of pixels (column 2 lines 14 – 34, image pickup device composed of two-dimensionally arrayed pixels); a first calculating portion which creates correction data by performing computation using signals which are acquired by image sensing in an unexposed state (figure 4A item 21-1 and column 13 lines 4 *et seq.*) and smaller in number than said plurality of pixels (column 12 lines 13 *et seq.* and column 13 lines 51 *et seq.*, region surrounding a fault pixel); and a second calculating portion which corrects image data of each of said plurality of pixels, acquired by image sensing in an exposed state, by using the correction data (figure 5 items 31-1 *et seq.* and column 13 lines 62 *et seq.*; and correcting each pixel is taught in column 2 lines 52 – 62, column 6 lines 50 – 62 column 13 lines 4 – 40; also figures 24 –

27 and column 21 lines 38 *et seq.* Kohashi et al. teaches that the faulty pixel group can be composed of more than one pixel for correcting i.e. plurality of pixels).

Regarding **claim 2**, as mentioned above in the discussion of claim 1, Kohashi et al. teaches all of the limitations of the parent claim. Additionally, Kohashi et al. teaches that said first calculating portion changes the number of signals to be used for creation of correction data in accordance with a sensitivity condition set at the time of image sensing (figure 9A – 9K; also column 14 lines 59 *et seq.* the pattern changes on an edge condition resulting in a varying signal used for correction).

Regarding **claim 3**, as mentioned above in the discussion of claim 1, Kohashi et al. teaches all of the limitations of the parent claim. Additionally, Kohashi et al. teaches that the said plurality of pixels are arrayed in the horizontal direction and the vertical direction (column 2 lines 14 – 34, image pickup device composed of two-dimensionally arrayed pixels; also figures 1, 2, 7, 9, 10, 12, 16, 18-22, and 24-47), and said first calculating portion creates the correction data by vertically mixing signals (column 13 line 62 – column 14 line 12; vertical direction pixel interpolating) from pixels which are smaller in number than said plurality of pixels and arrayed in the horizontal direction and the vertical direction (column 13 line 62 – column 14 line 12 region surrounding a fault pixel; and column 12 lines 13 *et seq.* and column 13 lines 51 *et seq.*, region surrounding a fault pixel).

Regarding **claim 5**, as mentioned above in the discussion of claim 1, Kohashi et al. teaches all of the limitations of the parent claim. Additionally, it is inherent that the first calculation portion will operate in accordance with when the image sensing apparatus is powered on via a power switch.

Regarding **claim 6**, Kohashi et al. teaches a control method for an image sensing apparatus (abstract and column 2 lines 5 *et seq.*) having a plurality of pixels (column 2 lines 14 – 34, image pickup device composed of two-dimensionally arrayed pixels); comprising: a first calculating step which creates correction data by performing computation using signals which are acquired by image sensing in an unexposed state (figure 4A item 21-1 and column 13 lines 4 *et seq.*) and smaller in number than said plurality of pixels (column 12 lines 13 *et seq.* and column 13 lines 51 *et seq.*, region surrounding a fault pixel); and a second calculating step which corrects image data of said plurality of pixels, acquired by image sensing in an exposed state, by using the correction data (figure 5 items 31-1 *et seq.* and column 13 lines 62 *et seq.*).

Regarding **claim 9**, as mentioned above in the discussion of claim 1, Kohashi et al. teaches all of the limitations of the parent claim. Additionally, Kohashi et al. teaches that only signals of a smaller number than said plurality of pixels to be corrected are acquired by image sensing in an unexposed state to create the correction data (column 13 line 62 – column 14 line 12 region surrounding a fault pixel; and column 12 lines 13 *et seq.* and column 13 lines 51 *et seq.*, region surrounding a fault pixel).

Regarding **claim 10**, as mentioned above in the discussion of claim 1, Kohashi et al. teaches all of the limitations of the parent claim. Additionally, Kohashi et al. teaches that the acquired signals are signals along a horizontal direction (column 2 lines 14 – 34, image pickup device composed of two-dimensionally arrayed pixels; also figures 1, 2, 7, 9, 10, 12, 16, 18-22, and 24-47).

Regarding **claim 11**, as mentioned above in the discussion of claim 1, Kohashi et al. teaches all of the limitations of the parent claim. Additionally, Kohashi et al. teaches that the second calculating portion uses the correction data to correct for noise in the image data (column 11 line 66 – column 12 line 12, noise canceling).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohashi et al. (US patent No 6,642,960) in further view of Hamasaki (US patent No 5,335,008).

Regarding **claim 4**, as mentioned above in the discussion of claim 3, Kohashi et al. teaches all of the limitations of the parent claim. Additionally, Kohashi et al. teaches that said first calculating portion creates the correction data by vertically mixing signals

from pixels (column 13 line 62 – column 14 line 12; vertical direction pixel interpolating), which are smaller in number than said plurality of pixels and arrayed in the horizontal direction and the vertical direction, through the corresponding amplifiers (column 13 line 62 – column 14 line 12 region surrounding a fault pixel; and column 12 lines 13 *et seq.* and column 13 lines 51 *et seq.*, region surrounding a fault pixel).

However, Kohashi et al. fails to disclose an amplifier for each array of pixels arrayed and plurality of pixels and arrayed in the horizontal direction and the vertical direction, through the corresponding amplifiers. Hamasaki, on the other hand discloses an amplifier for each array of pixels arrayed and plurality of pixels and arrayed in the horizontal direction and the vertical direction, through the corresponding amplifiers.

More specifically, Hamasaki discloses an amplifier for each array of pixels arrayed and plurality of pixels and arrayed in the horizontal direction and the vertical direction, through the corresponding amplifiers (column 2 lines 30 – 41).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Hamasaki with the teachings of Kohashi et al. so that the fluctuation of a threshold voltage of a load MOS transistor connected to the vertical signal line can be reduced so that an aperture ratio can be increased as the vertical signal line is reduced in thickness as taught in column 2 lines 24 – 29 of Hamasaki.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohashi et al. (US patent No 6,642,960) in further view of Examiners Official Notice.

Regarding 8, Kohashi et al. teaches a computer implements a control method for an image sensing apparatus (abstract and column 2 lines 5 *et seq.*) having a plurality of pixels (column 2 lines 14 – 34, image pickup device composed of two-dimensionally arrayed pixels), the method comprising:

a first calculating step which creates correction data by performing computation using signals which are acquired by image sensing in an unexposed state (figure 4A item 21-1 and column 13 lines 4 *et seq.*) and smaller in number than said plurality of pixels (column 12 lines 13 *et seq.* and column 13 lines 51 *et seq.*, region surrounding a fault pixel); and

a second calculating step which corrects image data of each of said plurality of pixels, acquired by image sensing in an exposed state, by using the correction data (figure 5 items 31-1 *et seq.* and column 13 lines 62 *et seq.*; and correcting each pixel is taught in column 2 lines 52 – 62, column 6 lines 50 – 62 column 13 lines 4 – 40; also figures 24 – 27 and column 21 lines 38 *et seq.* Kohashi et al. teaches that the faulty pixel group can be composed of more than one pixel for correcting i.e. plurality of pixels).

However, Kohashi et al. fails to teach a computer readable medium storing program code that is executed by the computer.

The examiner takes Official Notice that it is old and well known in the art to have a computer readable medium storing program code that is executed by a computer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a computer readable medium storing program code

that is executed by a computer since the computer readable medium is easily upgradeable.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usman Khan whose telephone number is (571) 270-1131. The examiner can normally be reached on Mon-Thru 6:45-4:15; Fri 6:45-3:15 or Alt. Fri off.

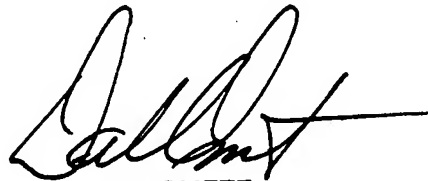
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2622

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Usman Khan
09/05/2007
Patent Examiner
Art Unit 2622



DAVID OMETZ
SUPERVISORY PATENT EXAMINER